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Who Shall Report Diseases?

Specialists and surgeons almost as a unit seem to consider themselves beyond the law. Rarely does a surgeon report a case of cancer, tuberculosis, or syphilis. Possibly he assumes that the physician who referred the case should make the report. There is but one rule to follow in reporting disease, namely, whoever makes the positive diagnosis and in whose care the patient is, however temporarily, should make the report.

Summary.

No disease has been placed on the notifiable list arbitrarily or by chance, but each for some definite reason. It therefore behooves every doctor to report every case of each notifiable disease for the following reasons:

That the proper authorities may be informed and prevent further spread;

That the information gained may be available as evidence of the need of public-health work;

That further knowledge may be gained as to the etiology and spread of diseases under conditions of which we now have no data; and

That the location of areas where certain diseases prevail may be known when it is possible to undertake special measures for their eradication.

PELLAGRA IN THE MOUNTAINS OF YANCEY COUNTY, NORTH CAROLINA.[1]

By G. A. Wheeler, Passed Assistant Surgeon, United States Public Health Service.

In point of altitude, Yancey County represents the highest portion of the mountainous plateau of western North Carolina. It is preeminently mountainous, and is regarded as the culmination of the Appalachian system. The Black Mountains compose the southeastern half of the county. There are 18 summits of this range in this county rising above 6,000 feet; the highest, Mount Mitchell, being 6,711 feet, the highest point in the United States east of the Rocky Mountains. The Smoky Mountains make up the greater portion of the remainder of the county. Among these mountains, in this county, are numerous summits, the highest, Bald Mountain, reaching an altitude of 5,530 feet. Numerous cross chains intersect in all directions, leaving very little valley land except along the margins of mountain streams.

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[1] From Field Investigations of Pellagra.

The county is bounded on the north by the Estatoe River, a fair-sized stream which marks the "Great Divide" or gorge separating the Black and Smoky Mountains (Yancey County) on the south from the Unaka and Iron Mountains (Mitchell County) on the north.

The lowest point in the county, around 2,000 feet above sea level, is at the base of the deepest portion of the "divide" or gorge where it passes the North Carolina-Tennessee line. This section of the county, comprising a radius of several miles, is a precipitous mass of rock cliffs and is practically uninhabited. The altitude for the entire county, therefore, ranges from around 2,000 feet at the northwest tip, the lowest point, to 6,711 feet, at the summit of Mount Mitchell.

The climate of this section is largely determined by the elevation. The summers are cool, the winters severe. The annual mean temperature varies from around 50 degrees for the lower portions of the county to around 40 degrees at the summits of some of the higher mountains. The summit of Mount Mitchell is said to have a mean annual temperature of 38 degrees. The low prevailing temperature is further evidenced by the fact that spruce, fir, hemlock, and other vegetation which thrives in cold climates only, are abundant in the forests of this section.

The county, as a whole, is rather sparsely populated. There are about 13,000 inhabitants scattered over an area of 289 square miles. Aside from Burnsville, the county seat, with a population of about 400, distributed over a relatively large area, there are no towns or villages of importance. The white population is, with very few, if any, exceptions, native American stock. There are about 300 colored people in the county, mainly confined to two or three localities.

The water supply comes largely from mountain springs, each family, as a rule, having a spring near the house. There are very few wells in the county, and nearly all of these are of the shallow, dug, stone-faced type. Many of the families in Burnsville are being supplied with water piped from a near-by mountain spring.

The facilities for excreta disposal are largely of the most primitive type. There are few privies of any kind outside the town of Burnsville. A few houses in Burnsville have flush toilets connected with cesspools and septic tanks.

The soil is, with few exceptions, rich, friable, and very fertile, producing in abundance grains, grasses, vegetables, and fruits. Sheep, cattle, hogs, and poultry are raised. There is still an abundance of natural range available for grazing. Some of the mountain tops are treeless and covered with wild grass, constituting large natural meadows.

Farming and stock raising are the chief pursuits of these people. Lumbering has been engaged in at various times and places for several years. There are, at present, two moderate sized saw-mill plants in operation in the county. The mining of mica and feldspar has received some attention in a small section of the county during recent years. However, much of the work is done by the farmers in the long period between crops. In most instances practically all the family food supplies are produced at home. As a rule each farm produces sufficient grains, forage, meats, vegetables, fruits, and poultry for home use, with a little to sell each year. The climate is ideally suited to keeping vegetables, fruits, etc., in their natural state over long periods of time. Potatoes, apples, cabbages, turnips, etc., are readily kept over winter when buried in the ground. The meats are kept from year to year in old-fashioned "smoke houses."

It is estimated that not less than 95 per cent of the families have one or more milch cows and, as a rule, are provided with plenty of fresh milk and butter throughout the year. Game and fish, heretofore fairly abundant, are now becoming scarce.

This is essentially an isolated section, there being relatively little communication with outside points. There have been no serious disease epidemics. The prevailing communicable diseases are typhoid fever, measles, mumps, whooping cough, and chicken pox. Typhoid fever is endemic, and scattered cases occur annually throughout the greater portion of the county. Occasionally several cases develop in the same household and less frequently several households in the same community are affected. Measles, mumps, whooping cough, and chicken pox appear periodically. There are to be found, however, numbers of households, all the members of which are susceptible to one or more of these common diseases. In many communities are to be found representatives of three successive generations, none of whom has had measles; others who have not had whooping cough, and so on throughout the list. Very few of the inhabitants are immune to smallpox. Very little vaccination has been done. There have been but few cases of smallpox reported in the entire county.

This section of the South and other places of high altitude were formerly thought to be free from pellagra. This apparent freedom has been explained by some on the assumption that climatic conditions here represented are not favorable for its development. Lavinder[1] credits this county with one reported case for the period 1907 to 1911, both years inclusive. Otherwise there is no evidence of the existence of pellagra in this section up to the summer of 1915. During the fall of that year the leading practitioners of the county were casually interviewed in regard to their past experience with pellagra or obscure affections resembling pellagra. With one exception, none had been led to suspect the existence of pellagra in this region. One had seen what he thought was a pellagrous dermatitis during the preceding summer. This case was a young man whose home was in Burnsville but who, at the time of developing symptoms and for some months prior thereto, was working at a railroad camp at Altapass, a near-by mountain point. The symptoms cleared up shortly after he returned to his home. A few months later (early in 1916) a case was reported near Burnsville. This patient, an elderly female, died before there was an opportunity to check the diagnosis.

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[1] The Prevalence and Geographic Distribution of Pellagra in the United States: Public Health Reports, Vol. XXVII, No. 50, Dec. 13, 1912.

In view of the altitudinal and climatic conditions involved, these reports seemed sufficiently suggestive to warrant further and more systematic observations regarding the incidence of pellagra in this locality. To this end, the local physicians were requested to report any cases or suspected cases observed. During the summer and fall of 1917, a total of six cases was reported. The section was visited October 6 and 7, 1917. Five of the six cases were seen and the diagnosis of pellagra was confirmed. The sixth case, having developed mental complications, had been committed to the State Hospital for the Insane.

On the outskirts of the village of Burnsville (altitude upward of 2,840 feet) were seen two active cases as follows:

1. Mrs. J. E. M., white, female, aged 45, wife of mountain farmer; resides on a mountain slope about 2 miles from Burnsville; was born and reared in the locality and had not been away from this particular vicinity in more than 17 years, and had never been outside of this general mountainous section. So far as known, this pellagrin had at no time come in contact with a case of pellagra. She and her husband state that her visits away from her own home have been almost exclusively to her father's home, about one-half mile distant. She states that during the spring of 1916 she had an attack similar in all respects to the present one, but none prior to that time. The present symptoms began in May, 1917. When seen on October 6, she showed active pellagrous lesions on skin of hands, forearms, and neck, with marked stomatitis, moderate diarrhea, and mild nervous and mental manifestations. She states that her health was good prior to the beginning of the first attack of pellagra (spring 1916). There was not at the time and, so far as known, there had not been a sign of pellagra among the other members of the household.

The dietary history of this pellagrin is of particular interest. According to her statement, she had never eaten meat, and during the past few years she had developed a strong dislike for milk and butter and rarely touched them. Her diet seems to have been mainly limited to pastries and delicacies, with vegetables of some sort occasionally. The attending physician was having considerable difficulty in bringing about an improvement in her diet and had made little, if any, progress. At his request she was later admitted to the United States Public Health Service Pellagra Hospital at Spartanburg, S. C., where she was induced to drink milk and eat some fresh meat. She made a satisfactory recovery.

This family is comparatively well to do, and from a dietary standpoint is surrounded with plenty. They have their own cows and hogs, and produce meat, milk, and butter in abundance.

2. Mrs. H. B., white, female, aged 36, wife of a laborer; born and reared in Yancey County; now resides in Burnsville; spent three days in Asheville, 35 miles distant, in 1913, otherwise has never been outside of the locality. So far as known she has never associated with a pellagrin. She lived about 2½ miles from and, to her knowledge, has not in any way associated with the preceding case. There was no evidence of pellagra among the other members of the household.

This pellagrin developed her first symptoms in June, 1917. When seen on October 7, the characteristic eruption was present on forearms and neck. She had not been strong, and her appetite had not been up to normal since the birth of a baby in February, 1917. She stated that she was eating no meat and but little milk, and this irregularly, until she was put on a special diet by the attending physician a short time previously.

This is a tenant family, and the nature of the home and surroundings indicate a low economic status. Practically no foodstuffs are produced at home.

At Murchison (upward of 3,000 feet above sea level), pellagrin J. W. M., white, male, aged 50, is said by the local physician to have developed his first symptoms of pellagra during the winter of 1916–17 and was later committed to the State Hospital for the Insane at Morganton, N. C. This case was not seen. However, the superintendent of the insane asylum subsequently informed me that the diagnosis of pellagra was confirmed upon admission to the institution on May 14, 1917. The information secured from the older residents and life-long acquaintances of this man is to the effect that he is an eccentric and lived the life of a recluse. They were quite positive that he had never been outside the county prior to his illness, and seemed to doubt very much that he had ever been outside his immediate vicinity.

At Eskota (upward of 3,100 feet above sea level) were seen three cases of pellagra, two of which were in the same household. Eskota is only a short distance below the summit of Mount Mitchell and is probably the highest inhabited point in the United States east of the Rocky Mountains. There is at this place a sawmill and lumber camp.

In the household of L. M. H., white, two active cases of pellagra were found; one a son 16 years of age, the other a daughter 12 years of age. This family moved to the lumber camp from a mountain farm in July, 1917. They had moved to this farm from an adjoining county in April of the same year. The history as furnished by the parents is that both children developed their present attacks during the months of May and June while living on the mountain farm. There was some evidence of preceding attacks in both children, but the information obtainable was indefinite, especially as regards the number and time of such attacks. Both parents appeared to be ignorant, indolent, and shiftless. The household and surroundings were filthy and indicated extreme poverty. The family of eight had earned practically nothing since coming to Eskota. Their food supplies, largely donated, came from the commissary maintained by the lumber company and consisted largely of meal, flour, fat salt pork, sirup, canned goods, and coffee. They had never owned a cow and had been without milk for years. These two cases were casually observed by a Burnsville physician while visiting in that section and had not received professional attention.

The third case at this place, S. A. M., white, female, widow, 42 years of age, came to Eskota from a farm in another section of the county on February 12 and developed pellagra the following August. She was in South Carolina for about two months in 1903. Otherwise she has always lived in the county, and before coming to Eskota, on the same mountain farm. This case was not active when seen, but definite residual lesions were in evidence on the backs of the hands and the forearms. The stomatitis is reported to have been so severe at one time as to interfere with nourishment. Prior to coming to Eskota she lived with a married son on her own farm and had been accustomed to having plenty of milk and butter, home-produced meats, poultry, and vegetables. At Eskota she lived with her son-in-law, who had moved there for the purpose of working at the sawmill. While there she ate no fresh vegetables and no milk. The main constituents of her diet came from the commissary and consisted of meal, flour, salt pork, potatoes, rice, sirup, and canned goods. Shortly after developing pellagra she returned to the home of her son on the farm, where she had made considerable improvement before returning to the lumber camp.

Clinically, these cases appeared to be of about the same average type and followed about the same clinical course as that of several hundred cases observed during the same season in well-recognized pellagrous communities ranging in altitude from 200 to 800 feet.

The above facts may be summed up as follows:

1. Cases of pellagra were observed that originated among inhabitants and in the climate of western North Carolina at an altitude of 3,000 feet and higher.
2. The cases seemed to follow about the same clinical course and were of about the severity of the average of cases at lower altitudes.
3. Indications of a restricted diet which included little or no milk or meat, either because of a dislike for these articles or because they were not available in the locality or could not be secured because of extreme poverty, were clearly manifest in each instance.